Geophysical Research Abstracts
Vol. 14, EGU2012-3845-1, 2012
EGU General Assembly 2012

A Comparison Study of Meteorological Elements between the Routine Meteorological Stations and nearby Field Meteorological Stations in the Northern Tibetan Plateau

L. Xu (1,2) and Z. Hu (1,*)

(1) Nagqu Station of Plateau Climate and Environment, Key Laboratory of Land Surface Process and Climate Change, Cold and Arid Regions Environmental and Engineering Research Institute, Chinese Academy of Sciences, Lanzhou 730000, China (lijiao198730@163.com), (2) Graduate University of Chinese Academy of Sciences, Beijing 100049, China, (*) Corresponding author: Zeyong Hu, E-mail: zyhu@lzb.ac.cn

Abastract

A comparison of climate change between Routine Meteorological Stations (RMSs) and nearby Field Meteorological Stations (FMSs) will be performed in order to distinguish the natural variability of climate change from the influence of human activities in the northern Tibetan Plateau. Three couples of region with different intensity of human activities are selected along Tibetan highway or railway. The RMSs are Nagqu (strong human activities area), Anduo (middle human activities area) and Wudaoliang (weak human activities area). The related FMSs are BJ, Amdo and D66 sites of Nagqu Station of Plateau Climate and Environment respectively.

This study investigated the differences of meteorological elements between the RMSs and FMSs using the observational data from Nagqu , Anduo and Wudaoliang routine stations and BJ, Amdo and D66 field stations from 2001 to 2009. Rresults showed significantly increasing trends in both the annual average temperature and the lowest temperature between RMSs and FMSs during the past decade. For example, the growing rate of difference in annual average temperature performed high at Nagqu and low at Anduo. The difference in the lowest temperature performed high at Nagqu also but low at Wudaoliang. Results also indicated that the differences of the annual average and lowest temperature between RMSs and FMSs in strong human activity period compared with that in weak human activity period performed high at Nagqu and low at Wudaoliang. Therefore there are different degrees of human activity impact performed in differences meteorological elements between RMSs and FMSs at Nagqu, Anduo and Wudaoliang respectively.

Key words: Climate change; Human activity; Northern Tibetan Plateau

Acknowledgments. This work was supported by National Natural Science Foundation of China (Grant No. 41175068), National Basic Research Program of China (Grant No. 2010CB951701) and the European Commission (Call FP7-ENV-2007-1, Grant nr. 212921) as part of the CEOP–AEGIS project.